

# Christopher Phillip Town

**Address:** Wolfson College  
Cambridge CB3 9BB, UK  
**Tel:** +44 (0)1223 763686

**Date of Birth:** July 3<sup>rd</sup> 1978  
**Nationality:** British  
**Email:** cpt23@cam.ac.uk

## EDUCATION

- 2001 – 2005      **University of Cambridge (Trinity College):      Ph.D. in Computer Science**  
Thesis on “Ontology based Visual Information Processing” under the supervision of Prof. John Daugman OBE. Awarded a prize in the BCS Distinguished Dissertation Awards in 2005.  
Awarded Industrial Fellowship from the Royal Commission for the Exhibition of 1851. Invited to present my work to HRH Prince Philip. Numerous refereed publications (see attached).
- 1997 – 2000      **University of Cambridge (Trinity College):      B.A. (Hons.)/M.A. Computer Science**  
Graduated with **First Class Honours** (first class in every year), ranked in the top 5%.  
Awarded special prize for outstanding final year project dissertation and elected to Trinity College Senior and Research Scholarships, ProJuvis Merit Scholarship, and IEE Undergraduate Scholarship. Tripos Prize (1998, 1999, 2000), Data Connection Prize, best group project prize
- 1988 – 1997      Staffelsee-Gymnasium Murnau (German grammar school). Achieved best result possible (1.0 average across 12 subjects) in the “**Abitur**” and best final exam score (98.3%) in school history.

## RECENT POSITIONS AND APPOINTMENTS

- Oct 2005 – present      **Junior Research Fellow**, Wolfson College, University of Cambridge
- May 2004 – present      **Co-Founder and Director**, Cambridge Ontology Ltd. (a Cambridge based high-tech startup)
- Oct 2004 – 2005      **Rouse Ball Scholar**, Trinity College, University of Cambridge
- Oct 2001 – 2004      **Industrial Fellow of the Royal Commission for the Exhibition of 1851** and **Staff Researcher** of AT&T Labs Research, seconded to carry out PhD research at Cambridge University and reporting directly to Dr David Belanger (AT&T Chief Scientist).
- June – August 2001      **Research Assistant** at AT&T Laboratories in Middletown, NJ, USA.
- July 2000 – June 2001      **Pre-doctoral Researcher** at AT&T Laboratories Cambridge.
- June – Sept 1999      **Summer Intern** at AT&T Laboratories Cambridge.
- June 1998 – Feb 1999      **Proof-reader** for the book “Understanding Consciousness – Its function and brain processes” written by Gerd Sommerhoff OBE, of Trinity College.

## SERVICES TO THE ACADEMIC COMMUNITY

- Programme Chair, IEEE Workshop on Multimodal Sentient Computing: Sensors, Algorithms and Systems, at CVPR 2007
- Programme Committee Member and Referee, International Workshop on Semantic Knowledge for Computer Vision (at ICCV 2005)
- Referee for the International Journal of Machine Vision and Applications
- Referee for the International Journal of Computer Vision
- Session Chair, International Conference on Vision Systems, 2003

## TEACHING EXPERIENCE

- Feb 2004 - present      **Guest lecturer:** Invited to give annual lectures on “Topics in High-level Computer Vision” and “Ontologies for High-level Computer Vision” as part of Prof. Daugman’s final year Computer Vision course. Excellent student feedback.
- Oct 2001 - present      **Project supervisor:** Successfully supervised 19 final year undergraduates and three Diploma students for their final-year Computer Science projects and dissertations (most of which received first class results, with several being singled out for special commendations by the examiners).
- Oct 2000 - present      **Course supervisor:** Tutorial supervision (up to 6h/week) of Computer Science and Engineering students at Cambridge University, covering almost all areas of Computer Science and Information Engineering.

## PROFESSIONAL AFFILIATIONS

- College Research Fellow and Regent of the University of Cambridge
- Professional member of the British Computer Society (**MBCS**)
- Alumnus of the **Royal Commission for the Exhibition of 1851**
- Fellow of the **Cambridge Philosophical Society**
- Active member of the **IEE, IEEE, ACM** and **AAAI**

## SELECTED ACCOMPLISHMENTS

### *Scholarships, fellowships, and research grants*

**Junior Research Fellowship**, Wolfson College, University of Cambridge (2005 onwards)

**EEDA Proof of Concept Grant** (£12K), Nov 2006

**Knowledge Transfer Grant** (£60K) from PPARC, Oct 2006

**Research Grant** (£125K total) from the Department of Trade and Industry, Nov 2004 – May 2006

**Industrial Fellowship** (approx. value £100K over 3 years) from the **Royal Commission for the Exhibition of 1851** for the duration of my PhD at Cambridge University, with the Chief Scientist of AT&T as my industrial supervisor.

Trinity College **Rouse Ball Scholarship** (worth £10K, awarded on the basis of research dissertation).

Trinity College **Senior** and **Research Scholarships** (awarded on the basis of exam performance).

**IEE Undergraduate Scholarship** for final year studies (competitive award to a select number of UK IT students).

**Full Merit Scholarship** (undergraduate fees + maintenance) from the “ProJuvis Foundation for the highly gifted”.

### *Academic distinctions and prizes*

Invited to **Buckingham Palace** for the 2006 alumni reception of the **Royal Commission for the Exhibition of 1851**

Invited to present my work to **HRH Prince Philip** at the **1851 Royal Commission Presidential Reception**, 2003.

**2<sup>nd</sup> best paper prize** (out of 109 submitted papers) at the International Conference on Vision Systems, 2003.

**First class results** in every university examination in every year of study, awarded Tripos Prize in every year. Final year undergraduate project dissertation deemed “**outstanding**” by the examiners (awarded Data Connection Prize).

Prize for **best student group project**, selected for demonstration to high-ranking academics at the Cambridge University Computer Lab’s 50<sup>th</sup> anniversary (“EDSAC99”) celebrations.

Programmer on the Trinity College team which won **first prize** at the 1998 British Computer Society programming competition in Southampton and came 3<sup>rd</sup> in **national finals**.

Received school medal for best exam performance. Numerous prizes at science and programming contests, e.g. **regional and state champion** of the German national junior science competition “**Jugend Forscht**”.

### *University and related activities*

**President** of the Trinity College Science Society, re-instated the society and organised numerous high-profile events.

Successfully completed 1999 and 2003 **CRAC “Insight into Management”** intensive leadership and business skills course, as well as **Entrepreneurship courses** at the Cambridge University Business School (Judge Institute).

Active on several **society committees**, especially as **President** of the Cambridge University Scientific Society (over 1200 members, 20 committee), **President** of the Humanism Society, **IT manager** of the Guild Society.

Involvement in student welfare, e.g. academic contact for 1<sup>st</sup> year undergrads and “College parent” for new graduates.

## OTHER INTERESTS

Science and technology, philosophy, politics, reading, travelling, photography, fencing, and cycling.

### *References available upon request*

## RESEARCH PUBLICATIONS

### *Peer-reviewed Academic Publications*

- Town, C.P. *"Sensor Fusion and Environmental Modelling for Multimodal Sentient Computing"*, chapter in the forthcoming book *"Multimodal Surveillance: Sensors, Algorithms and Systems"*, to be published by Artech, 2007
- Town, C.P. *"Multi-sensory and Multi-modal Fusion for Sentient Computing"*, International Journal of Computer Vision, Volume 71, Issue 2, 2007
- Town, C.P. *"Ontological Inference for Image and Video Analysis"*, International Journal of Machine Vision and Applications, Volume 17, Number 2, pp 94-115, 2006
- Saatci, Y. and Town, C.P. *"Cascaded Classification of Gender and Facial Expression using Active Appearance Models"*, Proc. International Conference on Automatic Face and Gesture Recognition, 2006
- Song, Y.Z. and Town, C.P. *"Visual Recognition of Man-made Materials and Structures in an Office Environment"*, Proc. International Conference on Vision, Video and Graphics, 2005
- Town, C.P. *"Vision-based Augmentation of a Sentient Computing World Model"*, Proc. International Conference on Pattern Recognition, 2004
- Town, C.P. and Pugh, D.J. *"Combining Contour, Edge and Blob Tracking"*, Proc. International Conference on Visualisation, Imaging, and Image Processing, 2004
- Town, C.P. and Moran, S.J. *"Robust Fusion of Colour Appearance Models for Object Tracking"*, Proc. British Machine Vision Conference, 2004
- Town, C.P. *"Ontology-driven Bayesian Networks for Dynamic Scene Understanding"*, Proc. International Workshop on Detection and Recognition of Events in Video (at CVPR04), 2004
- Town, C.P. *"Fusion of Visual and Ultrasonic Information for Environmental Modelling"*, Proc. International Workshop on Object Tracking Beyond the Visual Spectrum (at CVPR04), 2004
- Town, C.P. *"Ontology-guided Training of Bayesian Networks for High-level Analysis in Visual Surveillance"*, Proc. IEEE International Workshop on Performance Evaluation in Tracking and Surveillance (at ECCV04), 2004
- Town, C.P. and Sinclair, D.A. *"Language-based Querying of Image Collections on the basis of an Extensible Ontology"*, International Journal of Image and Vision Computing, Vol. 22/3, pp 251-267, 2004
- Town, C.P. *"Adaptive Integration of Visual Tracking Modalities for Sentient Computing"*, IEEE International Workshop on Visual Surveillance and Performance Evaluation in Tracking and Surveillance (at ICCV03), 2003
- Town, C.P. *"Computer Architecture for Self-referential Perceiving Systems"*, Perception journal special supplement (Proceedings of the European Conference on Visual Perception), 2003
- Town, C.P. *"Goal-directed Visual Inference for Multi-modal Analysis and Fusion"*, Proceedings of the IEE Conference on Visual Information Engineering, 2003
- Town, C.P. and Sinclair, D.A. *"A Self-referential Perceptual Inference Framework for Video Interpretation"*, Lecture Notes in Computer Science, Springer, Volume 2626, pp. 54-67 (Proceedings of the International Conference on Vision Systems), 2003 (winner of the runner-up prize for best cognitive vision paper)
- Town, C.P. and Sinclair, D.A. *"Ontological Query Language for Content Based Image Retrieval"*, Proceedings of the IEEE Workshop on Content-based Access of Image and Video Libraries (at CVPR'01), 2001

- Town, C.P. and Sinclair, D.A. *"Content Based Image Retrieval using Semantic Visual Categories"*, Society for Manufacturing Engineers, Technical Report MV01-211, 2001 (previously published as AT&T Laboratories Cambridge Technical Report TR2000-14)

### ***Dissertations***

- Town, C.P. *"Ontology based Visual Information Processing"*, PhD Thesis, University of Cambridge Computer Laboratory, 2004 (awarded a prize in the Distinguished Dissertation Competition held by the Conference of Professors and Heads of Computing and the British Computer Society, selected for publication by the BCS)
- Town, C.P. *"Neural Network based Region Classification for Image Retrieval"*, Final year Undergraduate Dissertation, University of Cambridge Computer Laboratory, 2000 (winner of the Part II Distinguished Dissertation award)

### ***Seminars and Technical Presentations***

(excluding conference presentations and lectures, see above)

- *"Large scale image retrieval on the Grid"* invited seminar to the Grid processing workshop organised by PPARC (Particle Physics and Astronomy Research Council), 2007
- *"Ontologies in Computer Vision and Image Retrieval"* invited seminar to the Natural Language and Information Processing Group, Cambridge University Computer Laboratory, 2006
- *"Large-scale Content based Indexing and Retrieval of Images"* invited talk to the Particle Physics and Astronomy Research Council meeting on Grid computing for Knowledge, Innovation, Technology & Enterprise, 2006
- *"Narrowing the Semantic Gap"* invited talk to the Departmental RA meeting, Cambridge University Computer Laboratory, 2006
- *"Ontologies for High-level Computer Vision"* guest lecture to the Part II Computer Science course on Computer Vision, Cambridge University Computer Laboratory, 2005 and 2006
- *"Topics in High-level Computer Vision: Appearance and Model-based Approaches and their Applications"* guest lecture to the Part II Computer Science course on Computer Vision, Cambridge University Computer Laboratory, 2004
- *"Seeing is Believing - Visual Cognition in People and Computers"* plenary talk at the 1<sup>st</sup> annual symposium of the Trinity College Science Society, 2004
- *"Topics in High-level Computer Vision: Appearance and Model-based Approaches and their Applications"* invited Part II computer science course lecture, Cambridge University Computer Laboratory, 2004
- *"Ontology-driven Inference and Fusion for Image and Video Analysis"* seminar at Queen Mary College, University of London, 2004
- *"Video Object Segmentation and Tracking using Probabilistic Inference Techniques"*, invited presentation to HRH Prince Philip and other dignitaries at the *Royal Commission for the Exhibition of 1851* Presidential Reception, 2003
- *"Personal Media Management"*, presentation and demo to senior researchers visiting AT&T Labs Cambridge, 2002
- *"ICON - Image Content-based Organisation and Navigation"*, presentation and demo at the International Conference in Computer Vision, Vancouver 2001 (extended version presented at two locations of AT&T Labs Research in the USA)

- *"3D Object Recognition using Neural Networks"*, research talk at AT&T Labs Research, New Jersey, 2001
- *"Semantic Region based Querying of Images"*, presentation at the EU-funded MOUMIR (Methods for unified multimedia information retrieval) project meeting, Lisbon, 2001

### ***Projects and Dissertations supervised***

(Part II and Diploma in Computer Science projects at the University of Cambridge)

- Plastiras, C. (2007) *"Multi-pose Face Detection"*
- Rahman, I. (2007) *"Automated Image Annotation using Kernel Density Estimation"*
- Abbasnejad, S. (2006) *"Body Plans for Detection and Recognition of Human Shapes"*
- Cashman, T. (2006) *"Facial Feature Detection"*
- Dodson, M. (2006) *"Integrating Context and Content Based Image Retrieval"*
- Mellor, J. (2006) *"Multi-View Face Detection"*
- Nespor, R. (2006) *"Context-based Face Detection"*
- Jiang, L. (2006) *"Estimating the Orientation of Digital Photographs"*
- Su, S. (2006) *"Linking Names to Image Content for Face Analysis"*
- Wang, J. (2006) *"Automatic Classification of 2D Face Images"*
- Wu, J. (2006) *"Global Image Content Inference"*
- Richards, M. (2005) *"Building Façade Interpretation"*
- Saatci, Y. (2005) *"Facial Expression Recognition in 2D Face Images"*
- So, L. (2005) *"Face Interpretation with a 3D Mesh Model"*
- Akhthar, N. (2004) *"Investigating the Use of Computer Vision in a Sentient Computing World Model"*
- Collins, T. (2004) *"Face Detection using Classifier Cascades"*
- Moran, S. (2004) *"Robust appearance Modelling for Visual Object Tracking and Analysis"*
- Pugh, D. (2004) *"Contour and Edge-based Tracking in Video Sequences"*
- Song, Y. (2004) *"Visual Recognition of Man-made Materials and Structures"*
- Buck, S. (2003) *"Face Detection in Still Images"*
- Mathy, A. (2003) *"Object Tracking in Video Scenes"*
- Anane, I. (2002) *"Colour-based Image Retrieval"*